UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0105-RI

April 16, 2001

Mr. Fred P. Patron
Senior Transportation Planning Engineer
Federal Highway Administration, Oregon Division
530 Center Street NE
Salem, OR 97301

Re: Reinitiation of Endangered Species Act Formal Section 7 Consultation, and Magnuson-Stevens Act Essential Fish Habitat Consultation for Antone Junction - John Day River Project, Wheeler County and Grant County, Oregon

Dear Mr. Patron:

Enclosed is the biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act that addresses the Antone Junction - John Day River project in Wheeler and Grant Counties, Oregon. This represents reinitiation of Section 7 consultation for the project, completed on June 20, 2000 (OSB2000-0105), due to the need to carry out additional work not covered by the original Opinion. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize the subject species, or destroy or adversely modify critical habitat. This Opinion includes reasonable and prudent measures with terms and conditions that NMFS believes are necessary and appropriate to minimize the potential for incidental take associated with this project. All the reasonable and prudent measures and terms and conditions of the original Opinion, dated June 20, 2000, also remain in effect.

In addition, this document also serves as consultation on Essential Fish Habitat (EFH) under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Stevens Act). An EFH analysis is required for chinook salmon (*Oncorhynchus tshawytscha*).

Questions regarding this letter or attached Opinion should be directed to Pat Oman of my staff in the Oregon State Branch Office at 503.231.2313.

Sincerely,

For Michael R Crowe

Donna Darm
Acting Regional Administrator

cc: Rose Owens - ODOT (w/o attachment)
Randy Floyd - ODOT (w/o attachment)
Julie Bunnell - ODOT
Shelly Schmidt - ODOT
Art Martin - ODFW (w/o attachment)
Shaun Robertson - Warm Springs Tribe
Alan Mauer - USFWS
Pat Cimmiyotti, ODOT District 9

Endangered Species Act - Section 7 Consultation
&
Magnuson - Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Antone Junction - John Day River
Wheeler County and Grant County, Oregon

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: April 16, 2001

Refer to: OSB2000-0105-RI

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1. ENDANGERED SPECIES ACT

1.1. Background

On December 22, 2000, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from the Federal Highway Administration (FHWA) for reinitiation of Endangered Species Act (ESA) section 7 formal consultation for highway improvements to U.S. Highway 26, along Mountain Creek and Rock Creek in Wheeler County and Grant County, Oregon. A biological opinion (Opinion) was issued on June 20, 2000 (OSB2000-0105) for culvert repairs and pavement preservation. The need for additional work at the project location, consisting of erosion repairs that must take place before the highway is re-paved, led to the reinitiation of consultation. The FHWA is funding the proposed repairs, and is the lead agency for the project. Oregon Department of Transportation (ODOT) has designed the project and will administer the construction contract. This Opinion is based on the information presented in the BA and the result of the consultation process, which included a site visit on October 25, 2000 and additional conversations with project team members.

The FHWA/ODOT has determined that Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) may occur within the project area. MCR steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). The proposed project is within MCR steelhead critical habitat, which was designated February 16, 2000 (65 FR 7764). Protective regulations were issued for MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The FWHA/ ODOT, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), determined that the proposed action is likely to adversely affect MCR steelhead.

The FWHA/ODOT are proposing to repair the shoulder, improve existing culverts, and install ten new drainage culverts along Mountain and Rock Creeks, which flow alongside Highway 26 for approximately 14 miles in Wheeler County and into a small area of Grant County. The project begins just east of the town of Mitchell at mile point 81.6, and extends to the junction of Highway 26 with Highway 19 at the Wheeler County/Grant County border at mile point 98.4. It is designed to repair and prevent erosion of the highway shoulder. Existing eroded areas will be filled with riprap, large boulders, and whole juniper trees. Areas where drainage is inadequate will be improved by constructing or repairing culverts. Highway shoulder and embankment erosion repair will be done at five priority locations, drainage culvert extensions will be done at existing culverts, and several new drainage culverts will be built.

This Opinion reflects the results of the consultation process. The consultation process involved a site visit by the NMFS biologist, ODOT staff, and two Oregon Department of Fish and Wildlife (ODFW) biologists on October 25, 2000, and correspondence and communications to obtain additional information and clarify the BA.

The objective of this Opinion is to determine whether the actions to repair erosion and improve drainage along U.S. Highway 26 in Wheeler and Grant Counties are likely to jeopardize the continued existence of MCR steelhead, or destroy or adversely modify the species' critical habitat.

1.2. Proposed Action

The proposed project will repair existing shoulder and embankment erosion and prevent future erosion by constructing improvements at 20 sites along the highway.

1.2.1. Project Details

1.2.1.1. Shoulder and Embankment Repairs

Priority Site #1, Mile Point 93.7: Large riprap will be placed in an eroded embankment area, beginning at the toe of the slope where mature alder trees are growing along the streambank. The upper section of the repair area will be a vegetated geogrid retaining wall, planted with 47 shrubs. There will be no work within the stream channel.

Priority Site #2, Mile Point 83.0: The shoulder will be built up by placing rock riprap and dead juniper trees along the streambank. The rock will anchor the juniper trees, which will be placed lengthwise with the dead trees at an angle nearly parallel to the flow of the stream. Riprap at this location will extend from the top of the streambank to the edge of the water; channel flow will not be constricted. Upstream of this location, several rock barbs will be constructed to divert flow away from the area of erosion. Some minor amount of riparian vegetation may be removed during the placement of rock. Instream work will take place during the ODFW preferred in- water work period for this area (July 15 to August 31).

Priority Site #3, Mile Point 91.7: Rock riprap and juniper trees will be placed in the area of erosion on the shoulder. The rock will anchor the trees in place. Some vegetation will be removed in the area where the embedded logs/rootwads are placed. If necessary, flowing water in the creek will be diverted away from the work area. Sediment will be captured by the log/tree revetment and eventually build up the stream bank in this location, and forty shrubs will be planted in the area to restore riparian function.

Priority Site #4, Mile Point 85.95: Bioengineering is not feasible at this location because of the narrowness of the canyon, which has created hydraulics that are creating the erosion problem. Because of the geomorphology at this site, subsurface drilling will be done to determine the best method to repair erosion and prevent further encroachment onto the highway shoulder. Only exploratory drilling will be done at this site during the in-water work period of July 15 to August 31.

Priority Site #5, Mile Point 92.8: At this location, Mountain Creek has a secondary channel that was created during the 1996 flood event in the canyon. Riprap will be placed along the bank, and this may cause some encroachment on the secondary channel. Root wads and juniper trees will be added to the toe of the slope, and willows will be planted. Riparian vegetation will be removed at the location where riprap and embankment material are placed. Sixty-three shrubs will be planted to compensate for lost riparian function. All work will take place during the in-water work window of July 15 to August 31.

1.2.1.2. Culvert Extensions

At mile points 83, 84.2, 84.4, 85.1, 85.5, and 91.2, work will be done to extend the outlets and/or the inlets of these existing pipe culverts. Minor amounts of riparian vegetation will be removed at the sites located at mile point 84.2 (several willows and a clump of roses), 84.4 (two willow clumps), and mile point 85.5 (minor sedge removal). All work will be done from the highway, so no heavy equipment will be operating within any watercourse. Clean, non-erodible fill will be used to build back the shoulder and improve drainage. Where feasible, existing vegetated soils will provide biofiltration of stormwater during heavy precipitation events.

1.2.1.3. New Drainage Culverts

Mile point 83.1: A new, 18-inch diameter, 56-foot long pipe culvert will drain water from the ditch along the highway into Mountain Creek. Riprap placed at the outlet will diffuse the flow of water coming out of the culvert during heavy precipitation.

Mile point 85.8: An 18-inch diameter, 53-foot long pipe will drain stormwater from the highway at this location where Mountain Creek flows parallel to the road. At the outlet of the pipe there will be riprap and an outlet basin to diffuse the outflow; vegetation (red osier dogwood and willow) on the creek bank will provide some biofiltration. The outlet basin may require some excavation.

Mile point 89.3: At this location an 18-inch diameter, 66-foot long pipe will be placed on a curve of the road upslope from Mountain Creek. The outlet of the pipe will have riprap treatment and an outlet basin, and below the outlet basin small alders, shrubs, and grasses will provide some biofiltration. No riparian vegetation will be removed at this site.

Mile point 92.9: A 36-inch diameter, 30-foot long corrugated metal pipe (CMP) will drain the highway at a location where Mountain Creek flows parallel to the highway. On the inlet side, 13 cubic feet of fill will be required, and 200-feet of ditch will be dug to allow water to drain off of the highway and flow through the culvert. A riprap outlet basin will be constructed at the new pipe outlet, necessitating excavation of the slope.

Mile Point 97.0: An 18-inch diameter culvert will be installed at this location with the inlet on the right side of the highway. Here, Rock Creek flows along the highway, so stormwater will drain from the

outlet into this waterbody through an area of riprap that will be placed down the slope all the way to the creek edge. A channel to hold the riprap will be excavated in the slope, which will obviate the need for digging into the stream channel to create a toe trench to anchor the riprap. Any riparian vegetation removed as a result of this installation will be replaced.

Mile point 97.65: A 24-inch diameter CMP culvert that is 40-feet long will be added to the existing drainage pipe at this location. Rock Creek flows immediately adjacent to the highway at this location, and the new pipe will drain directly into the bank above Rock Creek. The distance between the two pipes will be 63-inches. Riprap will be installed at the outlet of the new pipe, down the stream bank, to diffuse flow. The bank will be excavated to hold the rock and avoid putting a toe trench in the creek channel.

Mile point 97.83: At this location a 24-inch diameter, 80-foot long CMP will be placed with the outlet approximately 43-feet from Rock Creek. A riprap catch basin will be constructed at the outlet. Existing vegetation will provide biofiltration of the water going into Rock Creek, and any riparian vegetation removed during construction will be replaced.

Mile point 98.1: A 24-inch diameter, 56-foot long CMP, with a pipe outlet 56 feet from Rock Creek, will be placed at this location. A catch basin will be constructed at the outlet. Because the slope here is relatively flat, biofiltration through existing vegetation between the highway and the creek should be effective in limiting sediment delivery to the creek. Some ditch work at the inlet will be required. Riparian vegetation will be replaced if any is removed during construction.

Mile point 98.32: A 24-inch, 63-foot long CMP culvert will be placed so that the outlet is located 13 feet from Rock Creek. A riprap catch basin will be constructed at the outlet.

The work at all of the above culvert installations will be done from the surface of the highway. No heavy equipment will operate on the stream banks or within riparian zones. Some excavated material may roll down the embankment and enter the active flowing channel, causing temporary turbidity and sedimentation. In order to place the culverts and riprap catchment basins, some riparian vegetation may have to be removed. Any trees or shrubs that are removed during construction will be replaced at a 1:1.5 ratio. Generally, the culverts will improve drainage along the highway to eliminate sheet wash that carries pollutants into the creeks. The use of biofiltration by directing the stormwater runoff into vegetated areas or alternatively, into riprapped catchment basins, will be an improvement over the current situation that facilitates the delivery of sediment and pollutants into the watershed via highly eroded areas along the highway.

1.2.1.4. Disposal Areas

Three locations have been identified along the highway where excavated fill material may be placed within areas that are close to critical habitat. These are at mile points 91.2, 91.3, and 92.1. The

FHWA/ODOT will take measures to avoid erosion of these mounds of fill during construction, such as temporarily covering them in the event of forecast precipitation. The fill areas will be completely stabilized with plantings after the completion of construction.

1.2.2. Summary of in-water work

The project requires work within the two-year floodplain and the associated riparian zone to build new and repair existing culverts, to place riprap, and to excavate drainage areas, such as ditches and outfall basins, along the highway.

This construction will require excavation close to and, on occasion, within the creek channel, will result in bank disturbance, and will require the removal of riparian vegetation. Riparian vegetation will be replanted as described in the site-specific descriptions in the BA. No heavy equipment will operate from any location except the surface and immediate shoulder of the highway.

The ODOT Project Development Team (PDT) has estimated that all in-water construction - including work that will impact the active flowing channel as well as work within the riparian zone of the two-year floodplain - can be completed within the ODFW approved six-week in-water work period of July 15 - August 31.

1.3. Biological Information and Critical Habitat

The MCR steelhead Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on March 25, 1999 (64 FR 14517). Protective regulations were issued for MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Biological information concerning the MCR steelhead is found in Busby et al. (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed, although these fish came under ESA protection so recently that it is difficult to discern any meaningful trends in the data that have been gathered since listing and conservation measures went into effect.

Critical habitat was designated for the MCR steelhead on February 16, 2000 (65 FR 7764). Critical habitat for MCR steelhead encompasses the major Columbia River tributaries known to support this ESU, including the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the Columbia River and estuary. Critical habitat consists of all waterways below long-standing, naturally impassable barriers, which includes the project area. The adjacent riparian zone is also considered critical habitat. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

In addition, the Oregon Division of State Lands (ODSL) in cooperation with ODFW has designated specific waterways in the mid Columbia River ESU as Essential Indigenous Anadromous Salmonid

Habitat under Oregon Administrative Rules (OAR) 141-102-000. Mountain Creek, Rock Creek, and associated tributaries are within the Upper John Day part of the John Day River basin (HUC 17070201), which has been designated as essential indigenous anadromous salmonid habitat (http://statelands.dsl.state.or.us/esshabitat.html). Therefore, compliance with these policies and guidelines is also required by the state. Essential indigenous anadromous salmonid habitat, or essential habitat, means the habitat that is necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing. OAR 141-102-000 stipulates policies and standards which must be complied with in these designated areas. Filling or removal in essential habitat is presumed by ODSL to be detrimental to indigenous anadromous salmonids, and fill or removal will only be authorized if it can be shown that only acceptable adverse impacts to indigenous anadromous salmonids or their essential habitat will occur or the removal/fill will benefit populations of indigenous salmonids.

1.4. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: 1) Defining the biological requirements and current status of the listed species; and 2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action; 2) the environmental baseline; and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct and indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed

action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of MCR steelhead under the existing environmental baseline.

1.4.1. Biological Requirements

The first step in the methods the NMFS uses for applying the ESA section 7(a)(2) to listed salmon and steelhead is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list Middle Columbia River steelhead for ESA protection, and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing.

The Upper John Day populations of MCR steelhead are wild summer steelhead. Steelhead trout in the John Day basin co-occur with nonanadromous inland redband trout (*Oncorhynchus mykiss gairdneri)* and there is no certainty regarding the degree of reproductive isolation of these two groups (Busby et al., 1996). With the exception of some hatchery fingerlings released into the John Day River basin during the 1960s (Lindsay et al 1986), steelhead in the basin have not been supplemented by hatchery fish. This wild run of fish is considered to be one of the healthiest of the entire MCR steelhead Evolutionarily Significant Unit (ESU). Over a ten year period, adult returns to the John Day River basin declined, from an estimated 17,100 in 1992 to 5,711 in 1997 (see Table 1). However, more recent estimates indicate that John Day populations of MCR steelhead have rebounded and are not considered by ODFW to be at risk, with redd counts of 4.4 per mile basin wide in 2000; this is the highest level since 1992 (Tim Unterwegner, personal communication of March 2, 2001 to Art Martin).

Table 1. Estimated Spawning Escapement of Spring Chinook Salmon and Steelhead to the John Day Basin

Year	Spring Chinook	Summer Steelhead
1997	2,700	5,711
1996	3,300	5,658
1995	369	3,900
1994	2,400	9,300
1993	4,000	7,200
1992	3,100	17,100
1991	1,100	7,200
1990	2,200	12,000
1989	2,600	9,600
1988	3,000	36,400
1987	4,600	34,300
Mean	2,670	13,988

Source: Unterwegner and Gray (1995, 1996, 1997)

Mountain Creek and Rock Creek in the vicinity of the project are used by salmonids for juvenile rearing, spawning, and for upstream and downstream migration. No spawning beds have been identified within the project area.

Mountain Creek, Rock Creek, and their tributaries are designated as essential indigenous anadromous salmonid habitat by the ODSL (see discussion above, in Section 3). NMFS concluded that the MCR steelhead are not presently in danger of extinction, but likely to become extinct in the foreseeable future (Busby et al. 1996). This is primarily due to the declining abundance of natural runs. The most significant problems for MCR steelhead in the Columbia River Basin are the mainstream Columbia dams that inhibit migration, and the many water diversions and withdrawals for agricultural purposes that affect water quality. The degradation of freshwater habitat throughout the region is the primary reason that MCR steelhead and other salmonids in the region are at risk.

1.4.2. Environmental Baseline

The current range-wide status of the identified ESU may be found in Busby et al. (1995, 1996). The identified action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect

effects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Mountain Creek and Rock Creek, upstream 100-feet in Mountain Creek from an area adjacent to mile point 83, and downstream in Rock Creek to the extent that stream sediment levels are increased by the project, estimated to be approximately 200-feet downstream from a location that is adjacent to mile point 98.32 on U.S. Highway 26.

StreamNet smolt density model data for the reaches of Mountain Creek and Rock Creek in the project vicinity (StreamNet 2001) indicate that both drainages have poor instream cover, high temperatures, and sedimentation as habitat constraints. In addition, Mountain Creek lacks high quality pools, and Rock Creek has streambank degradation and insufficient gravel. The construction of Highway 26, which runs along Mountain Creek and then from the confluence of Mountain Creek with Rock Creek up to the point where Rock Creek enters the John Day River at river mile 199, resulted in flattening of the creek terraces and removal of riparian vegetation for about 15 miles. Mountain Creek flows within a narrow canyon that becomes a gorge after the confluence with Rock Creek. The upland vegetation is primarily western juniper/sage (*Juniperus occidentalis/Artemisia arbuscula*) with riparian vegetation dominated by willows (*Salix sp*) and white alders (*Alnus incana*).

Currently, the mainstems of Rock Creek and Mountain Creek, from mouth to headwaters, are listed under the Clean Water Act's Section 303(d), List of Water Quality Limited Water Bodies, as water quality limited for summer temperatures (ODEQ 1999). The project is located within this water-quality limited stretch of Rock Creek and Mountain Creek.

Based on the best available information on the current status of MCR steelhead range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA and by StreamNet), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of steelhead are substantially below historic numbers. Population abundance trends show recent declines in the numbers of returning adults. Degraded freshwater habitat conditions, which include the effects of grazing, irrigation, water withdrawals, and residential use, have contributed to the decline.

The NMFS Matrix of Pathways and Indicators (NMFS 1996) was used to assess the current condition of various steelhead habitat parameters. Use of the Matrix identified the following habitat indicators as either at risk or not properly functioning within the action area: Water temperatures, turbidity/sediment, chemical contaminants and nutrients, substrate, large woody debris, pool frequency and quality, off-channel habitat, refugia, streambank condition, floodplain connectivity, drainage network increase, road density and location, riparian reserves, and disturbance history and regime. Actions that do not

maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of MCR steelhead.

1.5. Analysis of Effects

1.5.1. Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area.

The proposed action has the potential to cause the following impacts to threatened MCR steelhead or designated critical habitat:

1. In-water work may cause direct adverse impacts to any juvenile steelhead that may be present near the work site.

The construction activity has the potential to directly harm steelhead due to handling or otherwise disturbing rearing juveniles. Inwater work to do shoring and place riprap may kill or displace juvenile salmonids. During construction, short-term increases in sediment and turbidity could reduce light penetration and inhibit primary production, abrade and clog fish gills, prevent feeding by sight feeders, stop migration, and cause any fish in the area to avoid the disturbed reaches of the creek. The effects of these activities on MCR steelhead will be minimized by limiting construction work to the ODFW-approved in-water work period.

2. Water quality, riparian function, and stream channel morphology may be altered, causing indirect adverse impacts to steelhead.

Increased sedimentation will cause temporary turbidity and may result in minor siltation of downstream spawning gravels, affecting the potential for successful reproduction. There is a potential for changes in channel conditions and dynamics following the placement of riprap, and the existence of riprap along the embankment may alter fish rearing and migration behavior.

The effects of these activities on MCR steelhead and aquatic habitat factors will be limited by implementing construction methods and approaches included in project design and intended to avoid or minimize impacts. These include:

- All in-water work will be conducted during the ODFW-approved in-water work period of July 15 to August 31. This will avoid impacts to migrating steelhead, and protect eggs and emerging fry.
- Alteration and disturbance of stream banks and existing riparian vegetation will be minimized to the extent possible. ODOT will minimize the amount of riprap used, and place only clean, non-erodible, upland angular rock of sufficient size to ensure long-term armoring.
- Riparian habitat will be protected by flagging the areas to be cleared prior to construction. Areas outside of the flagged zone will not be impacted.
- Native vegetation will be maintained wherever possible. Shrubs and trees will be removed by clipping at ground level, and not grubbed out of the soil, except in those areas of construction where complete removal is necessary. Invasive exotic species will not be protected.
- Riparian vegetation will be replaced at a rate of 1.5:1. Disturbed riparian areas in the project vicinity will be replanted with native vegetation.

For the proposed action, the NMFS expects that the effects of the proposed project will tend to maintain each of the habitat elements over the long term, greater than two years. However, in the short term, a temporary increase in sediment entrainment and turbidity, and disturbance of riparian and instream habitat is expected. Fish may be killed or temporarily displaced during the in-water work. However, the bank protection in areas of ongoing erosion will reduce the amount of sediment coming from currently exposed stream banks, and the improved drainage from the culvert extensions will reduce the amount of polluted sheet wash flowing from the highway surface during precipitation. These elements are expected to provide long-term benefits to fish and other aquatic species. The potential net effect from the proposed action, including proposed plantings, is expected to be the maintenance and restoration of functional steelhead habitat conditions.

1.5.2. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. The project is located within critical habitat for MCR steelhead, which consists of all waterways below naturally impassable barriers. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, input of large woody debris or organic matter, and others.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project site and watershed scales. The results of this evaluation, based on the "matrix of pathways and indicators" (MPI) described in *"Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale"* (NMFS 1996), are detailed above. This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species and

assesses the constituent elements of critical habitat. An assessment of the essential features of MCR steelhead critical habitat is obtained by using the MPI process to evaluate whether aquatic habitat is properly functioning.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity and disturbance of riparian and instream habitat is expected. In the long term, a net improvement of habitat will occur due to the construction of juniper barbs and log/rootwad treatments that will capture sediment and build up the banks where they are currently subject to ongoing erosion. In addition, the drainage improvements will reduce the input of toxicants coming off of the highway during precipitation. Consequently, NMFS does not expect that the net effect of this action will diminish the long-term value of the habitat for survival of MCR steelhead.

1.5.3. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat of Mountain Creek and Rock Creek throughout the project area. The action area extends 100-feet upstream of the project site boundary, and 200-feet downstream. The project actions consist of extending existing culverts and constructing new ones, repairing areas of the highway shoulder that are eroding, and digging ditches to improve drainage. These actions are detailed in the project description section above. Increased use of the road is not anticipated as a result of these actions. NMFS is not aware of any significant change in non-Federal activities that are reasonably certain to occur within the action area. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Other FHWA/ODOT transportation projects may be built in future years in the vicinity of Mountain Creek and Rock Creek, although none are currently scheduled in the five-year State Transportation Improvement Plan (STIP). A highway preservation project, to be completed in 2002, has already been permitted under Section 7 (refer to OSB 2000-0105). Any additional highway projects would be reviewed through separate section 7 consultations and are not considered cumulative effects of this project.

1.6. Conclusion

NMFS has determined that the proposed action is not likely to jeopardize the continued existence of MCR steelhead or destroy or adversely modify critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. The potential net effect from the proposed action, including proposed plantings and habitat restoration, is expected to be the

maintenance and restoration of functional steelhead habitat conditions. Because all work will be done within the in-water work period of July 15 to August 31, no direct mortality of rearing juvenile steelhead is expected to occur.

1.7. Reinitiation of Consultation

Consultation must be reinitiated if: 1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; 2) new information reveals effects of the action may affect listed species in a way not previously considered; 3) the action is modified in a way that causes an effect on listed species that was not previously considered; or 4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, ODOT must contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of a threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of MCR steelhead because of detrimental effects from temporarily increased sediment levels, turbidity, and the loss of habitat (non-lethal); and the potential for direct incidental take (harassment of juvenile steelhead) during in-water work (non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects

on steelhead habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to within the area of direct project disturbance, estimated to extend 100-feet upstream and 200-feet downstream of the project area.

2.2. Effects of the Take

In this Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat for MCR steelhead when the reasonable and prudent measures are implemented.

2.3. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities at the Antone Junction project, measures shall be taken to limit the duration and extent of in-water work, and to time such work when the impacts to MCR steelhead are minimized.
2. To minimize the amount and extent of incidental take from construction activities in or near the creeks, effective erosion and pollution control measures shall be developed and implemented throughout the area of disturbance. The measures shall minimize the movement of soils and sediment both into and within the river, and will stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and instream habitat, or where impacts are unavoidable, to replace or restore lost riparian and instream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all work isolation measures (if any), “take” of fish, erosion control measures, and plantings for site restoration shall be monitored and evaluated both during and following construction, and meet criteria as described below in the terms and conditions.

2.4. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, FHWA/ODOT must comply with the following terms and conditions, which will implement the reasonable and prudent measures

described above. These terms and conditions should be incorporated into construction contracts and subcontracts to ensure that the work is carried out in the manner prescribed. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and Mountain Creek and Rock Creek habitat. These terms and conditions are non-discretionary.

1. In-water work: To implement reasonable and prudent measure # 1, above, the FHWA/ODOT shall ensure that:
    a. Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period. The FHWA/ODOT designs will ensure passage of fish as per ORS 498.268 and ORS 509.605 (Oregon's fish passage guidance).
    b. All work within the active channel of Mountain Creek and Rock Creek will be completed within the ODFW-approved in-water work period (July 15 to August 31). Any adjustments to the in-water work period will first be approved by, and coordinated with, NMFS and ODFW.
    c. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material shall be placed to maintain normal waterway configuration whenever possible.
    d. During ODOT project design, ODOT will work to minimize the amount of riprap used. Where riprap is necessary, only clean, non-erodible, upland angular rock of sufficient size for long-term armoring will be employed. Unless completely infeasible, placement will be from above the bank line and not "end-dumped."
    e. The diversion or withdrawal of water from any fish-bearing waterway for any construction purpose, including but not limited to hydroseeding, will comply with all state and federal laws, particularly those that require a temporary water right and screening of intakes. The FHWA/ODOT shall be responsible for informing all contractors of their obligations to comply with existing, applicable statutes.
    f. At least one week prior to the start of in-water work, the ODOT project manager shall notify the ODOT Regional Environmental Coordinator (REC) of the expected date of construction.
    g. The ODFW biologist shall monitor the construction of work isolation facilities, if any, and ensure that fish trapped within the work area are removed using the least destructive technology that is feasible. Within six months of the completion of construction, the FHWA/ODOT shall provide a report to NMFS that contains all of the information for reporting take that is contained in the Oregon Department of Fish and Wildlife Scientific Taking Permit application and in the OPSW 2001 Supplemental Application Request (ODFW, 2001). In the project description section, the report shall describe the construction methods used to isolate and remove fish, and the length of time that the work isolation was in place, as well as the numbers and species of fish handled.

2. Erosion and pollution control: To ensure implementation of reasonable and prudent measure # 2, above, an Erosion Control Plan (ECP) will be prepared by ODOT or the contractor, and carried out by the contractor. The ECP will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures shall be sufficient to ensure compliance with applicable water quality standards and this Opinion. The ECP shall be maintained on site and shall be available for review upon request. The following conditions must be met:

   a. Effective erosion control measures shall be in-place at all times during the contract. Construction within the five-year floodplain will not begin until all temporary erosion controls (e.g., straw bales, silt fences, or other methods) are in place within the riparian area. Erosion control structures will be maintained throughout the life of the contract.

      i. Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep unstable slopes in conjunction with seeding, or prior to seeding.

      ii. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work on exposed slopes.

   b. All exposed areas will be replanted with native vegetation. Erosion control planting, and placement of erosion control blankets and mats (if applicable) will be completed on all areas of bare soil within 7-days of exposure within 150-feet of waterways, wetlands or other sensitive areas, and in all areas during the wet season (after September 17). All other areas will be stabilized within 14-days of exposure. Efforts will be made to cover exposed areas as soon as possible after exposure.

   c. All erosion control devices will be inspected throughout the construction period to ensure that they are working adequately. Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, and monthly on inactive sites. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional erosion controls will be installed as necessary.

   d. In the event that soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.

   e. Where feasible, sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters an aquatic resource area.

   f. A supply of erosion control materials (e.g., straw bales and clean straw mulch) will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.

   g. All equipment that is used for instream work will be cleaned prior to entering the 2-year floodplain. External oil and grease will be removed, along with dirt and mud.

Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.

h. Material removed during excavation shall only be placed in upland locations where it cannot enter sensitive aquatic habitat. Conservation of topsoil (removal, storage and reuse) will be employed.

i. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

j. Project actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and ODEQ's provisions for maintenance of water quality standards. Toxic substances shall not be introduced above natural background levels in waters of the State in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed 10% above background as measured 30-feet downstream of the project, per the NPDES permit.

k. The Contractor will develop and implement an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this PCP. The PCP shall include the following:

    i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pit operations, haul roads, equipment storage sites, fueling operations and staging areas.

    ii. Methods for confining and removing and disposing of excess construction materials, and measures for equipment washout facilities.

    iii. A spill containment and control plan that includes notification procedures, specific containment and clean up measures which will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.

    iv. Measures to be used to reduce and recycle hazardous and non-hazardous waste generated from the project. This information will include the types of materials, estimated quantity, storage methods, and disposal methods.

    v. The person identified as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractor's PCP.

l. Areas for fuel storage, refueling and servicing of construction equipment and vehicles will be located above the 10-year floodplain of any waterbody. Overnight storage of non-wheeled vehicles is allowed within the two year floodplain during the in-water work window; however, to minimize the risk of fuel reaching the water, refueling of these vehicles should not occur after 1 pm (so the vehicles do not have full tanks overnight).

m. No surface application of nitrogen fertilizer will be used within 50-feet of any aquatic resource.

3. Riparian habitat protection measures: to implement reasonable and prudent measure # 3, above, FHWA/ODOT shall ensure that:
   a. Boundaries of the vegetation clearing limits will be flagged by the project inspector. Ground will not be disturbed beyond the flagged boundary.
   b. Alteration of native vegetation will be minimized. Where possible, native vegetation will be clipped by hand so that roots are left intact. This will reduce erosion while still allowing room to work. No protection will be made of invasive exotic species (e.g. Himalayan blackberry), although no chemical treatment of invasive species will be used.
   c. Riparian understory and overstory vegetation will be replaced following the provisions described in the amended Biological Assessment. Woody vegetation will have a replacement rate of l.5:1. Replacement will occur within the project vicinity, which includes the area near Fort Creek (a Mountain Creek tributary).

4. Monitoring: To implement reasonable and prudent measure # 4, above, FHWA/ODOT shall ensure that:
   a. Erosion control measures as described above in 2(d) shall be monitored.
   b. All significant riparian replant areas will be monitored to insure the following:
      i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.
      ii. Plantings are performing correctly and have an adequate success rate (success rate depends on the planting density, but the goal is to have a functional riparian vegetation community).
   c. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at other appropriate locations will be done.
   d. A plant establishment period (three year minimum) will be required for all riparian mitigation plantings.
   e. By December 31 of the year following the completion of construction, FHWA/ODOT shall submit to NMFS (Oregon Branch) a monitoring report with the results of the monitoring required in terms and conditions (4(a) to 4(c) above).

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   f. Within six months of the completion of construction, if any work isolation and handling/relocation of fish has occurred, the FHWA/ODOT shall report any “take”

associated with the project, using the scientific taking permit form provided by ODFW (ODFW 2001).

3. MAGNUSON-STEVENS ACT

Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) to establish new requirements for "Essential Fish Habitat" (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH. "Essential Fish Habitat" means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (Magnuson-Stevens Act §3). The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed Pacific salmon fisheries (PFMC 1999). EFH includes those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (i.e., properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH, and it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.
The consultation requirements of section 305(b) of the Magnuson-Stevens Act (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30-days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

3.1. Identification of Essential Fish Habitat

Designated salmon fishery EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California,

except above the impassable barriers identified by PFMC. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). The proposed action area encompasses the Council-designated EFH for chinook salmon (*Onchorhynchus tshawytscha*).

3.2. Proposed Action

The proposed action is detailed above in Section 1. The proposed action is the construction and improvement of culverts and the repair of erosion along the shoulder of Highway 26. The action area includes the streambed and riparian habitat of Mountain Creek and Rock Creek, upstream of mile point 83 (along Mountain Creek) 100-feet and downstream of mile point 98.32 (along Rock Creek) 200-feet. The objective of this EFH consultation is to determine whether the proposed action may adversely affect EFH for chinook salmon. Another objective of this EFH consultation is to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed action.

3.3. Effects of the Proposed Action

NMFS expects that the effects of this project on chinook salmon EFH are likely to be within the range of effects to listed MCR steelhead, as described in the ESA portion of this consultation. Based on that analysis, NMFS finds that the proposed project is likely to adversely affect EFH for chinook salmon.

3.4. Conclusion

NMFS believes that the proposed action may adversely affect the EFH for Pacific Salmon.

3.5 Conservation Recommendations

The FHWA/ODOT have provided for minimization of the potential effects to EFH in the proposed project design. The reasonable and prudent measures and the terms and conditions outlined above are applicable to chinook salmon EFH. Therefore NMFS recommends that they be adopted as EFH conservation measures. If the FHWA/ODOT adopt this recommendation, potential adverse effects to EFH will be minimized.

3.6. Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the FHWA/ODOT to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigte, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with

NMFS; conservation recommendations, the reasons for not implementing the FHWA/ODOT shall explain its reason for not following the recommendations.

3.7. Consultation Renewal

The FHWA/ODOT must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920[k]).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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